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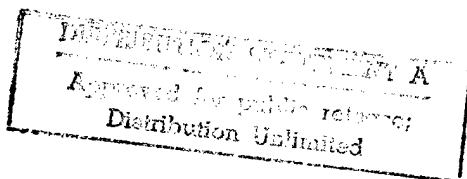
United States General Accounting Office

Report to the Chairman, Joint Economic
Committee, U.S. Senate

June 1998

CHINA

Military Imports From the United States and the European Union Since the 1989 Embargoes



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National Security and
International Affairs Division

B-279891

June 16, 1998

The Honorable James Saxton
Chairman, Joint Economic Committee
United States Senate

Dear Mr. Chairman:

In June 1989, the United States and the members of the European Union¹ embargoed the sale of military items to China to protest China's massacre of demonstrators in Beijing's Tiananmen Square. You have expressed concern regarding continued Chinese access to foreign technology over the past decade, despite these embargoes. As requested, we identified (1) the terms of the EU embargo and the extent of EU military sales to China since 1989, (2) the terms of the U.S. embargo and the extent of U.S. military sales to China since 1989, and (3) the potential role that such EU and U.S. sales could play in addressing China's defense needs. In conducting this review, we focused on military items—items that would be included on the U.S. Munitions List. This list includes both lethal items (such as missiles) and nonlethal items (such as military radars) that cannot be exported without a license.² Because the data in this report was developed from unclassified sources, its completeness and accuracy may be subject to some uncertainty.

Background

The context for China's foreign military imports during the 1990s lies in China's recent military modernization efforts.³ Until the mid-1980s, China's military doctrine focused on defeating technologically superior invading forces by trading territory for time and employing China's vast reserves of manpower. In 1985, China adopted a new military doctrine that emphasizes the use of modern naval and air power in joint offensive operations against regional opponents. Lacking equipment needed to implement its new doctrine, China began buying small amounts of military items from other nations, including the United States and some European

¹In 1989, the European Union—then known as the European Community—consisted of Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and the United Kingdom. Austria, Finland, and Sweden became EU members in 1995.

²We did not address exports of items with both civil and military applications because the embargoes do not bar the export of dual-use items. Experts believe that such items are an important source of high technology for China's military.

³This report does not assess China's military modernization efforts. For a fuller discussion of them, see our report entitled National Security: Impact of China's Military Modernization in the Pacific Region (GAO/NSIAD-95-84, June 6, 1995).

nations. However, the 1989 massacre of demonstrators in Tiananmen Square led to the imposition of the U.S. and EU arms embargoes—disrupting China's access to these sources of modern military technology.

Results in Brief

The EU embargo is based on a 1989 political declaration that EU members will embargo the “trade in arms” with China. Each EU member may interpret and implement the embargo’s scope for itself. We found no cases of EU members entering into new agreements to sell China lethal military items after 1989, although some members delivered lethal and nonlethal military items to China during the 1990s—apparently in connection with preembargo agreements—and have more recently agreed to deliver additional nonlethal military items. According to experts, the embargo is not legally binding and any EU member could legally resume arms sales to China if it were willing to bear the political consequences of doing so. At least two EU members are now considering whether the embargo should continue.

In contrast to the EU embargo, the U.S. embargo is enacted in law and bars the sale to China of all military items—lethal and nonlethal—on the U.S. Munitions List. The President may waive this ban if he believes that doing so is in the national interest. Since 1989, he has issued waivers to (1) allow the delivery to China of military items valued at \$36.3 million to close out the U.S. government’s pre-1989 defense agreements with China and (2) license commercial military exports valued at about \$313 million—primarily commercial satellite and encryption items. Recent U.S. executive branch actions suggest that its view of China’s human rights record—the basis for the embargo in the first place—may be changing. Erosion of the EU embargo may also raise questions regarding the future of the U.S. embargo.

The rather small amount of EU and U.S. sales of military items to China since 1989 could help address some aspects of China’s defense needs; however, their importance to China’s modernization goal may be relatively limited because Russia and the Middle East have provided almost 90 percent of China’s imported military items during this period. According to experts with whom we spoke, China must overcome obstacles posed by its military’s command and control, training, and maintenance processes before it can fully exploit such items.

EU Military Exports to China Have Been Limited

In reaction to the Tiananmen Square massacre, the European Council—an EU decision-making body comprised of ministers from EU member countries—imposed several sanctions in June 1989, including “an embargo on trade in arms with China.” However, according to experts, the Council’s declaration was not legally binding. It also did not specify the embargo’s scope. For example, it did not state whether the embargo covers all military articles, including weapons platforms, nonlethal military items, or components.

Interpretation of Embargo Left to Members

EU and other European officials told us that the European Union has left the interpretation and enforcement of the declaration to its individual member states⁴ and that the members have interpreted the embargo’s scope in different ways. Officials in some EU nations informed us that their nations have embargoed the sale of virtually all military items to China. In contrast, the United Kingdom’s interpretation of the EU embargo does not bar exports of nonlethal military items, such as avionics and radars. The UK embargo is limited to lethal weapons (such as bombs and torpedoes), specially designed components of lethal weapons, ammunition, military aircraft and helicopters, warships, and equipment likely to be used for internal repression. European and EU officials told us that EU members tried during the early 1990s to develop a detailed EU-wide interpretation of the embargo’s scope. These attempts apparently fell short and resulted only in the members’ mutual recognition that they were not selling China lethal weapons.

According to EU and European officials, the EU embargo could be formally ended by unanimous consent or informally eroded by individual EU members’ resumption of military trade with China. EU members, whose defense firms are faced with severe economic pressures, could move to modify their participation in the embargo if they believe China’s human rights situation is improving. A recent EU report noted that human rights in China, while still far from meeting international standards, had improved over the past 20 years. There have been signs that some EU members have sought to increase military sales to China. We found that at least two EU members—Italy and Spain—are now reassessing whether the embargo should be continued.

⁴EU officials informed us that this reliance on the EU members reflects the members’ independence in defense matters.

EU Sales of Military Items to China Since 1989

No EU members appear to have concluded new agreements to sell lethal weapons to China since the imposition of the EU embargo. As shown in table 1, three EU members have delivered, or agreed to deliver, military items to China since 1989.⁵

Table 1: EU Military Items Delivered to China, 1990-97

Country	System	Lethal	Agreement date
France	Castor-2B naval fire control radar	No	Pre-1989
	Crotale ship-to-air missiles and launcher	Yes	Pre-1989
	TAVITAC naval combat automation system	No	Pre-1989
	Sea Tiger naval surveillance radar	No	Pre-1989
	AS-365N Dauphin-2 helicopter	No	Pre-1989
	SA-321 Super Frelon helicopter	No	Pre-1989
Italy	Aspide air-to-air missile	Yes	1989 ^a
	Electronic countermeasures for A-5M aircraft	No	Pre-1989
	Radar for F-7M and F-7MP fighters	No	1993
United Kingdom	Avionics for F-7M fighter	No	1989 ^b
	Searchwater airborne early warning radar (no deliveries to date)	No	1996

^aAccording to the source of the information, this agreement's exact date is unclear.

^bThis agreement appears to have been concluded prior to June 1989.

Sources: Stockholm International Peace Research Institute, other public sources.

Two EU member states delivered lethal weapons to China after the embargo, according to publicly available sources of information. These deliveries—French Crotale ship-to-air missiles and Italian Aspide air-to-air missiles—appear to have been made in connection with preembargo agreements. Similarly, French-licensed Chinese helicopter production, which continued into the 1990s, began prior to 1989. Also, the United Kingdom honored a preembargo agreement by providing China with radars, displays, and other avionics for its F-7M fighter aircraft.

During the 1990s, Italy and the United Kingdom agreed to sell nonlethal military items to China. Italy agreed to sell fire control radars for use on Chinese F-7M and F-7MP export fighters. The United Kingdom agreed to sell China the Searchwater airborne early warning radar system. UK officials informed us that the decision to do so is consistent with the UK interpretation of the EU embargo, in that the Searchwater is not a lethal weapon or a weapons platform.

⁵See appendix I for a brief description of these items.

Waivers Have Allowed Exports of Some U.S. Military Items to China

On June 5, 1989, immediately after the massacre of prodemocracy demonstrators at Tiananmen Square, the President announced sanctions on China to protest its actions. In February 1990, Congress codified the sanctions' prohibition on weapon sales in Public Law 101-246. The law suspended the issuance of licenses for the export to China of any defense article on the U.S. Munitions List. It exempted from this prohibition U.S. Munitions List items that are designed specifically for use in civil products (such as internal navigation equipment for commercial airliners) unless the President determines the end user will be the Chinese military. The law also specifically barred the export of U.S.-origin satellites for launch on Chinese launch vehicles. Because the U.S. Munitions List includes nonlethal military equipment (for example, radios and radars) in addition to lethal equipment (such as missiles), the U.S. prohibition on arms sales to China covers a broader range of items than the EU embargo, as implemented.⁶

Under the law, these items may be exported to China if the President reports to Congress that it is in the national interest to terminate a suspension.⁷ Under this authority, Presidents Bush and Clinton have issued waivers for exports of Munitions List and satellite equipment to China based on determinations that doing so was in the national interest.⁸

Recent U.S. executive branch actions suggest that its position on China's human rights record may be changing. For the first time in several years, the United States recently decided against sponsoring a United Nations resolution condemning China's human rights. Such a shift could have an impact on implementation of the U.S. embargo, which resulted from China's human rights abuses. According to press reports, the executive branch has recently considered easing restrictions on commercial satellite projects in China—in part through the use of blanket waivers.

Sales of Munitions List Items to China Since 1989

The United States has delivered or licensed for export to China almost \$350 million in Munitions List equipment since 1990. These exports were made through (1) government-to-government agreements managed by the

⁶The Munitions List can also include dual-use items if they are specifically designed, developed, configured, adapted, or modified for military application and have significant military or intelligence applicability requiring that they be controlled as munitions.

⁷The law also allows the President to lift the sanctions if he reports to Congress that China has made progress on a program of political reform covering a range of issues, including human rights.

⁸Since 1990, many items once controlled on the Munitions List have been moved to Commerce Department control and are therefore no longer subject to U.S. sanctions barring their export to China. In 1992, many items were moved to Commerce's control as part of a larger rationalization process.

Department of Defense (DOD) under the Foreign Military Sales Program and (2) commercial exports licensed by the State Department, the majority of which were related to launches of U.S.-origin satellites in China. All were authorized under presidential waivers declaring the export to be in the national interest or were specifically exempted from the sanctions under the law.

Government-to-Government Sales

In December 1992, President Bush issued a waiver stating that it was in the national interest to allow the export of military equipment in order to close out four government-to-government military assistance programs that had been suspended by the sanctions. The waiver stated that these deliveries would not significantly contribute to China's military capability and closing these cases would improve the prospects for gaining further cooperation from China on nonproliferation issues. The total value of these exports, shown in table 2, was about \$36.3 million.

Table 2: U.S. Government Exports of Munitions Items to China, 1990-97

Dollars in millions		
Program	Purpose	Deliveries
Peace Pearl (F-8 modernization)	Provide modern avionics for China's F-8 fighters	Two modified F-8 fuselages, four avionics kits, and related equipment
MK 46 Mod 2 torpedoes	Provide four torpedoes for test and evaluation purposes with ultimate deployment on Chinese Navy ships and helicopters	Four torpedoes including spares and related test and maintenance equipment
Artillery locating radars	Provide four AN/TPQ-37 Firefinder counter-artillery radar systems	Two AN/TPQ-37 radars, including parts and support equipment ^a
Large-caliber artillery plant	Provide production capability for large-caliber artillery munitions	Miscellaneous components ^b

^aTwo of these radars had been shipped before the sanctions.

^bMajor equipment was shipped prior to the sanctions.

Source: DOD.

These programs were in various states of completion when U.S. sanctions were imposed. No new government-to-government agreements have been opened since 1990. No open or unfulfilled agreements are now pending between the U.S. government and China under the Foreign Military Sales Program. The equipment ending these programs was delivered to China

between 1993 and 1995. It included four MK-46 Mod 2 torpedoes, spare parts, maintenance, and test equipment. China's Navy was to test the torpedoes for use on its ships and helicopters.

Commercial Exports of Munitions List Items

The Department of State has approved for export to China about \$313 million in Munitions List items since 1990. As shown in table 3, \$237 million of these exports involved launches of U.S.-origin satellites from China.

Table 3: Approved U.S. Commercial Export License Applications for Munitions List Equipment to China, January 1990-April 1998

Dollars in millions		
Waiver requirement	Munitions List items	Value
Approved export licenses for Munitions List items requiring a presidential waiver for export to China	Satellites and related equipment	\$237.0
	Encryption for civil applications or satellites	63.1
Approved export licenses for items exempted from U.S. sanctions	Munitions List equipment for inclusion in civil products (e.g., inertial navigation gear for civil airliners)	12.7
Total		\$312.8

Note: Values represent figures provided on the export applications, not the value of actual shipments. In practice, the value of actual exports is often less.

Source: U.S. Department of State.

The President determined that allowing these exports was in the national interest. According to State officials, since 1990 11 presidential waivers have removed export restrictions on 21 satellite projects.⁹ Waivers were also granted to permit the export of encryption equipment controlled on the Munitions List. One case involved a \$4.3-million communications export to China's Air Force.

Since 1990, over \$12 million in export licenses have been approved for Munitions List equipment designed for inclusion in civil products. These exports are not prohibited under U.S. sanctions and therefore do not require a presidential waiver. The majority of these exports involve navigational electronics used in commercial airliners operated in China.

Between 1992 and 1996, control over exports of commercial encryption equipment and commercial satellites was moved from the Munitions List

⁹Export licenses for many of these satellite projects were issued by the Department of Commerce, rather than the Department of State, and are therefore not included in table 3.

to the Commerce Department's Commodity Control List. Since U.S. sanctions restrict Munitions List exports and do not prohibit the export of dual-use items, commercial encryption equipment can now be exported to China without a presidential waiver. U.S.-origin commercial satellites, however, though no longer on the Munitions List, are covered by the law, and exports still require a presidential waiver.¹⁰

China's EU and U.S. Military Imports Could Help Address Some Defense Needs

The small amount of EU and U.S. military item sales to China since 1989 could help address some of China's defense needs. However, their importance to China's modernization goal is overshadowed by the much larger amounts of military equipment provided by Russia and the Middle East. Moreover, before China can fully exploit such items, it must overcome obstacles in its military's command and control, training, and maintenance systems.

Chinese Use of EU and U.S. Military Items

China has used French helicopters to reinforce its weak antisubmarine warfare capabilities. According to open sources, China has imported or built under license between 65 and 105 modern French turbine-powered helicopters, including about 40 after 1989. The helicopters include the SA-321 Super Frelon (built as the Z-8) and the AS-365 Dauphin-2 (built as the Z-9). China's Navy has adapted 25 of these helicopters to serve as its antisubmarine warfare helicopter force and equipped some with antisubmarine torpedoes. The Z-9 is carried aboard several Chinese naval vessels. It has also been tested by China's Army with ground-attack equipment, including antitank missiles.

According to experts, China's only effective ship-to-air missile is the French Crotale missile system. China has deployed the Crotale on four ships, including its two most modern destroyers.¹¹ Also, China has reverse-engineered the Crotale—reducing China's dependence on foreign suppliers. Similarly, China has reportedly reverse-engineered Italy's Aspide air-to-air missile for use as a ship-to-air missile.

China's planned purchase of six to eight British Searchwater airborne radar systems would provide China with some degree of warning against

¹⁰Other items moved from the Munitions List to Commerce jurisdiction since 1990 include jet engine hot-section technology, commercial global positioning system equipment, and some night vision equipment. See our reports entitled Export Controls: Issues in Removing Militarily Sensitive Items From the Munitions List (GAO/NSIAD-93-67, May 31, 1993) and Export Controls: Change in Export Licensing Jurisdiction for Two Sensitive Dual-Use Items (GAO/NSIAD-97-24, Jan. 14, 1997).

¹¹These ships, however, still lack long-range, ship-to-air missiles.

low-flying air attacks as well as help it direct fighter aircraft, detect small vessels, and augment over-the-horizon targeting.¹² China may mount the radars on converted Y-8 transports.

China could possibly use its four U.S. Mod 2 version MK-46 torpedoes to improve its copy of the Mod 1 version, which China has already deployed on its French helicopters. In contrast with the Mod 1, the early-1970s era Mod 2 has an improved computer that provides a re-attack capability. The MK-46 torpedo's range and speed exceed that of China's other western air-launched, antisubmarine torpedo—the mid-1970s era Italian Whitehead 244S.¹³

We do not know whether China has benefited from U.S. commercial satellite transfers. State officials told us that export licenses for satellite projects in China contain provisos intended to minimize the risk of any unauthorized transfer of sensitive technology. However, not all Commerce Department licenses for exports of commercial satellites to China include such provisos. Recent press reports have asserted that, despite these controls, U.S. technology has been transferred to China and has improved the reliability of China's missiles. We have not evaluated the implementation of the security guidelines and control procedures on satellite launches.

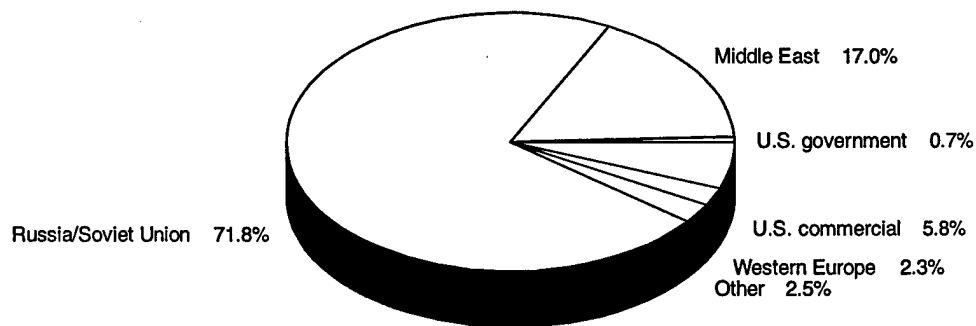
Russia and Middle East Provide Most of China's Modern Military Items

While these EU and U.S. military items could be used to address some defense needs, they constitute only a small part of the range of military items that China has imported from foreign suppliers since 1989. As shown in figure 1, total EU and U.S. exports constituted less than 9 percent of the military items imported by China during the embargoes' first 7 years. Without U.S. commercial satellites and encryption exports, this share falls to less than 3.4 percent.

¹²The United Kingdom has been reported as offering its Argus airborne warning system to China, but China appears to have chosen an Israeli system.

¹³China acquired the Whitehead in the mid-1980s and has deployed it on helicopters.

Figure 1: Deliveries of Foreign Military Items to China, 1990-96



Total value: \$5.3 billion (current-year dollars).

Note: The U.S. commercial share depicted above is based on the value of export licenses granted since 1990, rather than on the value of actual deliveries.

Sources: U.S. Arms Control and Disarmament Agency; the Departments of State and Defense.

Moreover, Russia and Israel have sold or agreed to sell to China items that are far more lethal than those sold by EU members, as well as items similar to those obtained from EU members. For example, reported Russian agreements include

- two Sovremenniy destroyers, which are more modern than China's domestically produced destroyers and which typically carry advanced supersonic antiship missiles, ship-to-air missiles with a much greater range than the Crotale, and antisubmarine helicopters that are considerably larger than the Z-9 helicopter;
- about 50 Su-27 fighter aircraft—similar to U.S. F-15s—armed with potent air-to-air missiles and licensed Chinese Su-27 production;
- about 25 Mi-17 transport assault helicopters; and
- four Kilo diesel electric submarines (including two of a very quiet class that Russia has never before exported) and homing torpedoes.

Israel has helped China with its development of (1) the F-10 fighter aircraft (similar to the U.S. F-16) by providing technology developed for the aborted Israeli Lavi fighter project and (2) various missiles. It has also agreed to sell to China its Phalcon airborne phased array surveillance

radar, which, if fitted to a Russian airframe, would provide China an airborne warning and command system.

China Faces Difficulties in Incorporating Modern Arms

According to experts, China will have to overcome several persistent problems before it can effectively use its imported arms to support its new military doctrine and help reinvigorate its domestic defense industry.

China lacks command and control capabilities needed to effectively integrate its armed forces in the fast-moving joint offensive operations called for by its new doctrine. China's air force units are hampered in their ability to communicate with air defense, naval, and ground units. China also lacks a reliable air defense intelligence system. While its future airborne early warning systems will help address this problem, China will still have to learn how to integrate such systems into its air defense system. Experts informed us that military systems integration remains a weakness for China.

China's acquisition of new and advanced military systems will also test its training and maintenance processes. China may have to significantly enhance the training, quality, and education level of its military personnel to use increasingly advanced equipment. Moreover, according to experts, China's Air Force has not yet considered the training implications of its new offensive joint operations doctrine. Chinese pilots fly fewer hours than their western counterparts and tend to fly less demanding training missions that do not emphasize joint operations. Experts informed us that China's preference for buying relatively small numbers of foreign military systems and skimping on training and maintenance support packages reduces opportunities for its military personnel to become familiar with their new equipment and to augment China's weak maintenance efforts.

This practice of buying limited numbers of foreign systems may reflect China's interest in obtaining foreign arms for reverse-engineering purposes. China has long stressed its need to become self-sufficient in weapons development and less dependent on foreign suppliers. However, despite some successes, China has had a mixed record in reverse-engineering foreign systems. Its efforts to do so are hampered by an inefficient defense sector and by the increasing complexity of modern military systems.

Conclusion

Recent U.S. executive branch actions suggest that its view of China's human rights record—the original basis for the embargo—may be changing. In light of these actions and the possible weakening of support for the EU embargo by some European governments, one question facing the United States appears to be how it would respond if the EU embargo were to erode significantly in the future.

Agency Comments

DOD concurred with a draft of this report and provided written technical comments, which we incorporated where appropriate. The Department of State provided oral comments and stated that the draft report was just and reasonable. DOD's written comments are reprinted in their entirety in appendix II.

Scope and Methodology

To identify the terms of the EU embargo and EU military sales to China, we interviewed officials and reviewed documents at EU offices in Washington, D.C., and Brussels, Belgium; foreign and/or defense ministries in Belgium, France, Germany, Sweden, and the United Kingdom; and the Departments of State and Defense and the U.S. Arms Control and Disarmament Agency. We also contacted the governments of other EU members regarding their interpretation and implementation of the EU embargo.

We obtained data on EU military sales to China from numerous experts, including those at the National Defense University, the Monterey Institute for International Studies' Center for Non-Proliferation Studies, the Stockholm International Peace Research Institute, the Heritage Foundation, the RAND Corporation, and the International Institute for Strategic Studies. We based our depiction of EU sales to China on data developed by these experts and from a variety of public sources.

To identify the terms of the U.S. embargo and U.S. military sales to China, we reviewed Public Law 101-246 and its legislative history. We also interviewed officials and reviewed documents at the Departments of Commerce, Defense, and State. We developed our depiction of U.S. sales primarily from information taken from databases at the Department of State's Office of Defense Trade Controls and DOD's Defense Security Assistance Agency. We did not validate the accuracy of these databases.

To identify the potential role of EU and U.S. military items in addressing Chinese defense needs, we consulted numerous experts, including those at the National Defense University, the Monterey Institute of International

Studies' Center for Non-Proliferation Studies, the Stockholm International Peace Research Institute, the Heritage Foundation, the RAND Corporation, and the International Institute for Strategic Studies. We also attended symposiums on Chinese security issues that were sponsored by the National Defense University, the University of Maryland's Institute for Global Chinese Affairs, and the American Enterprise Institute. We used these experts' analyses of Chinese military requirements and shortcomings as a framework for our assessments of the potential role that EU military items could play in meeting Chinese military needs.

To determine the magnitude and sources of China's post-1989 arms imports, we drew on data from the U.S. Arms Control and Disarmament Agency's unclassified World Military Expenditures and Arms Transfers database, which is based on delivery data. Because this data significantly underreports U.S. deliveries, we supplemented it with (1) U.S. government to government delivery data obtained from the Defense Security Assistance Agency and (2) commercial export licensing data obtained from the Department of State's Office of Defense Trade Controls.

We are providing copies of this report to other congressional committees and the Secretaries of State and Defense. Copies will also be provided to others upon request.

Please contact me on (202) 512-4128 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix III.

Sincerely yours,

A handwritten signature in black ink, reading "Harold J. Johnson". The signature is written in a cursive, flowing style.

Harold J. Johnson, Associate Director
International Relations and Trade Issues

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Abbreviations

DOD Department of Defense

Description of Selected European Union Military Items Provided to China, 1990-97

According to various public sources, European Union (EU) member states have delivered, or agreed to deliver, the following items to China since 1989.

Naval Systems for the Luhu Destroyers

France has provided several systems for China's Luhu destroyers, including the Crotale missile system. France first installed the Crotale on its ships in the late 1970s. In 1982, it developed the Crotale variant later provided to China. According to public sources, the Crotale is a short-range (up to 13 kilometers), ship-to-air point defense missile that can travel at more than twice the speed of sound. The system also includes a missile director, a missile launcher mounting, a fire control room with supporting electronics, and a console in a combat information center. The missile director uses a Castor radar and infrared and television tracking systems.

Other French equipment on the Luhu destroyers includes the Sea Tiger naval surveillance radar, the Dauphin-2 (Z-9) helicopter (described later), and the TAVITAC combat data system (which is used to integrate the Luhus' various onboard systems).

Dauphin-2 (Z-9) Helicopter

In 1980, France agreed to allow China to build the AS-365 Dauphin-2 in China as the Z-9 helicopter. The Chinese Navy has equipped Dauphin-2s with sensors, torpedoes, and missiles for use aboard its vessels. The Dauphin-2 is a medium-weight multirole helicopter that is powered by two turbine engines. Capable of carrying 11 passengers and 2 pilots, the Dauphin-2 has a top speed of 140 nautical miles per hour and a range of 410 nautical miles. Composite materials are used in its main and rear rotor blades, and its tail rotor is built into the vertical fin.

Super Frelon (Z-8) Helicopter

France delivered the SA-321 Super Frelon helicopter to China in 1977 and 1978 and agreed to allow China to build the Super Frelon, under the designation of Z-8, in 1981. The Chinese Navy has used Super Frelons for antisubmarine missions and has equipped them with sensors, torpedoes, and antiship missiles. A heavy shipboard helicopter that is powered by two turbine engines, the Super Frelon has a top speed of 134 nautical miles per hour and a range of 440 nautical miles. It can carry 27 fully armed troops or 39 unequipped troops.

Aspide Missile

According to a public source, Italy developed the Aspide from the U.S. Sparrow air-to-air missile and began producing it in 1977. The semi-active radar-guided Aspide has a top speed of over twice the speed of sound and a range of about 7 nautical miles.

Searchwater Airborne Early Warning Radar

The United Kingdom first deployed the Searchwater aboard its Nimrod aircraft in 1979 and adapted it for use aboard Sea King helicopters during its 1982 war with Argentina over the Falkland Islands. It later developed the Skymaster version of the Searchwater, which it subsequently incorporated into the Searchwater 2 system. According to a public source, the airborne Skymaster uses an I-band transmitter that can operate in (1) a pulse Doppler mode to provide look-down detection of airborne targets and (2) a frequency agile conventional mode to detect ships as well as aircraft flying above the Skymaster. When operating at 10,000 feet, it is capable of detecting (1) fighters and small boats below it at ranges of about 70 nautical miles, (2) bombers flying below it about 100 nautical miles away, and (3) larger vessels about 130 nautical miles away. The radar can store and update data on 100 airborne and 32 surface targets simultaneously.

F-7M/F-7MP Avionics

The United Kingdom and Italy have provided avionics for the F-7M and MP fighters. The Soviet Union first allowed China to build the F-7—a variation of the MiG-21—in 1961. China later developed the M and MP versions for export to other nations, including Pakistan. According to public sources, the United Kingdom provided China with heads-up displays, weapon-aiming computers, and fire control radars for the F-7M. Italy later provided a new fire control radar for the F-7M and MP.

Comments From the Department of Defense



DEFENSE INTELLIGENCE AGENCY

WASHINGTON, D.C. 20340



U-3577/PO-LL

May 12, 1998

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (INTERNATIONAL
SECURITY AFFAIRS) ATTENTION: Mr. Schriver

SUBJECT: Defense Intelligence Agency (DIA) Comments to General Accounting
Office Draft Report, "CHINA: Military Imports from the United States
and the European Union Since the 1989 Embargoes."

1. DIA has reviewed subject report and provides the following unclassified comments:

Page 18. Paragraph beginning "Israel has helped China": Regarding the last sentence and the sale of the Phalcon, the system has been sold. It was announced at the Paris Air Show last June. The tense of the sentence needs to reflect this.

Page 22. Paragraph beginning "To determine the magnitude ..." The DIA analyst is concerned that data from the Arms Control and Disarmament Agency's World Military Expenditures and Arms Transfers (WMEAT) database was supplemented with data from the Defense Security Assistance Agency (DSAA) and State's office of Defense Trade Controls (DTC). DSAA data and DTC data are the basis for the US numbers in the WMEAT document. If the WMEAT data is supplemented with DSAA and DTC data, the data may have been double counted.

2. DIA POC for this action is Mr. Brian Hufker, Office of Legislative Liaison, (703) 697-5101.

FOR THE DIRECTOR:

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